Public release copy. Source: `31_dream_question_5.md`, Gravity Frontier Research, David Vávra, Independent Researcher, Prague. SHA-256 of the Markdown source: `2365e05143d41cf76a748a53001c13dd0193ded77ebdf1918d2f819c54856d26`. First published at vavradev.com/research on 2026-11-04. The text below is the published copy of the source (punctuation normalized for publication: no em dashes).

Dream Question 5, Decision Document

v1.0 (2026-10-28): the fresh multi-frontier survey ordered by doc 29 §6 item 5 ("the honest route to discovery if the owner wants discovery after this cycle") and by the owner's words of record for this pass, "*We are not here for the conference but for the frontier discovery, how the universe works.*" Seven lane scouts + one bigness adversary + this judge.

Judged 2026-10-28 (09:30–10:20 CET) from eight commissioned scout reports: `scout_dq5_foundations.md` (6 candidates, 18 declined), `scout_dq5_spacetime.md` (5 candidates, 14 declined; probe P-CS executed), `scout_dq5_cosmology.md` (5 candidates, 15 declined), `scout_dq5_qft-arithmetic.md` (7 candidates; the ϕ^4 closure test executed), `scout_dq5_information.md` (6 candidates; probes A/A2/A3 executed), `scout_dq5_statistical.md` (5 candidates; probes P-A1/P-A2/P-B executed), `scout_dq5_instruments.md` (6 candidates; probes A–D executed, the $\Lambda_2(3)$ exhibit), `scout_dq5_adversary.md` (Scout C v5: 31 shapes attacked, 5 lane rank-1/2 candidates killed by computation, 4 survivors, probes P1–P5 executed). Inputs read in full: README.md (index, open fronts, state of the field); `00_DREAM_QUESTION.md`; doc 22 §6 (whole); doc 26 (whole, the format precedent); doc 29 (whole, the four-instance lesson, the "instruments are mined out" finding, the admissibility tests (a)–(g)); the eight scout reports (whole); the scouts' probe directories (`scout_dq5_instruments_probe/`, registration, probe D script and log, probe B log, manifest, read, not re-run; `scout_dq5_adversary_probe/` listing). Read for the pre-checks: the full text of Zurel–Okay–Raussendorf–Heimendahl 2110.12318 (ar5iv, §1–§7 and the start of Appendix A; the rest of the appendices NOT read, owed to L1) and of Zurel–Heimendahl 2407.10349 (ar5iv, both halves: Theorem 1 classification, Theorem 3, the conclusion, the open-problem list); the abstracts of 2602.22336, 2312.10734, 2407.10349, 2305.17287; the arXiv author listings of Zurel (11 papers, newest 2610.06607), Raussendorf (2025–26: 4, none on Λ), Heimendahl (none since 2024); the Okay listing returned HTTP 429 twice and is typed NOT RUN.

***Judge-side computation (judge grade, one leg, not of record; records in `dq5_judge_probe/`, `MANIFEST.sha256` inside).** J-A, every band base, first prime and record reserve certified by own trial division AND sympy `isprime` (09:37 CET, a certification, no forecast). Forecasts J-B, J-C1, J-C2, J-C3 were registered in `registration.txt` (sha256 `672c3a1240e532df…`, stamped 2026-10-28 09:43:59 CET) BEFORE either probe script existed (scripts hashed 09:46:05; runs 09:46–09:49). J-B, the census of closed subsets of the 40 lines of Z_3^4 by an own DFS with closure propagation (0.1 s). J-C, an own-route re-certification of the instruments scout's $\Lambda_2(3)$ exhibit: own construction of the 360 stabilizer planes, own seed, HiGHS used only to locate, each vertex solved EXACTLY as the unique rational solution of its tight system (no `limit_denominator`, no primes), all 360 plane sums checked as Fractions, Pauli coefficients computed exactly in Z[ω] with $|F|^2 = x^2 - xy + y^2$, and the closure test of the Pauli support under commuting sums (30.3 s). Canon pins: 48 files (every `NN_*.md`, README, SUBMISSION_STATUS, 00, 21a, 30a, the eight scout reports, three engines) hashed at 09:37:42 and re-hashed at 09:53:06 CET, byte-identical. No prime drawn; no committed engine imported or executed; no committed file modified; no background process (pgrep clean). This file and `dq5_judge_probe/` are the only artifacts. Bar and format per `00_DREAM_QUESTION.md`, doc 22 §6, doc 26 and doc 29; every claim inherits the standing bans (§8, last paragraph); licensing is never posting; defer-until-big governs external timing.*

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0. First act, the order of record, and the trigger status (the conference is not a gate for this pass)

1. **The order of record.** Doc 29 §7 found no FIELD-or-better discovery front on the house's instruments and named three routes to discovery: the Perimeter output, a new instrument, or a fresh multi-frontier survey (doc 29 §6 item 5: "*not a DQ5 re-mine of this corpus*"). The owner chose the survey, with the words quoted in the header: discovery about how the universe works, not the conference. This pass is that survey. Its admissibility bar is the four-instance lesson of docs 23–28 with the tests (a)–(g) of doc 29, plus the four tests the DQ5 scouts earned today, **(h)** asymptotic-in-disguise (statistical lane, adopted by the adversary), **(i)** the erasure-count test, **(j)** the two-instance measure test (adversary), **(l)** two-sided implementability before any sector is counted (adversary's own defect), and the instruments scout's **(h′)**: the instrument's readout must be certified well-defined on the whole registered family before any forecast is registered. The judge adds two in §8.
2. **The Classicality-Adjudicator triggers were NOT re-run by this pass** (the spacetime scout says so explicitly; the other lanes did not touch them). The Adjudicator itself is DONE (docs 30/30a, 2026-09-25); its triggers now govern only the owed post-2026-10-30 re-sweeps (G26-2, G30-2 and the per-export sweeps), which belong to the owner's post-meeting block and are not gates for a discovery front. Nothing in this document is conditioned on the Perimeter meeting, by the owner's words.
3. **The witness line and the observer line were not re-mined**, per the task and doc 29 §3: no candidate below re-poses a row of doc 29 §3, of `scout_dq4_frontier.md` §2's fourteen-row ledger, or of doc 22 §6.2 / doc 26 §3. Where a lane candidate drifted back onto them (F5 relational arrival on the doc-15 clock; S6/D11 observer algebras; I6 S-matrix magic loci as a doc-21 rider) it is ruled as such in §4.

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1. The merged pool (dedup ledger)

Raw supply: 40 ranked lane candidates (F1–F6, S1–S5, K1–K5, Q1–Q7, I1–I6, T1–T5, N1–N6) plus the adversary's two DECISIVE-shaped no-instrument watch items (A1, A2) = **42 raw entries**, with some sixty further declined/killed shapes in the lanes' own ledgers (not re-listed here; each stays as its lane ruled it unless named below). Merged: **41 distinct questions** (A2 is the strong form of K5), of which **4 survive as discovery fronts**, 4 are duties, 1 is an engine build, 3 are watch items, and 29 are killed or declined. Grades follow the adversary's DECISIVE / FIELD / INCREMENTAL / DUTY scale where he graded, the judge's otherwise (°). "DAF" = decided at freeze, with the deciding certificate, definition or construction named in §4.

#	merged candidate	sources	fate
N1	**LAMBDA-3, where the constructible classical model of odd-prime quantum computation ends: does the CNC sector (Zurel–Heimendahl 2024) host every two-qutrit state?**	instruments C1 ≡ adversary survivor N1; the judge's re-posing (§5) around the literature anchor the scouts had not read (2407.10349 Theorem 1/Theorem 3 + conclusion)	**SHORTLIST 1, ★ RECOMMENDED (FIELD-lite, foundations; honest altitude stated)**
Q1	**REGGE-EXACT, is "linear Regge trajectories from consistency" a theorem at every finite bootstrap order?**	qft C1 ≡ adversary survivor Q1	**SHORTLIST 2, runner-up 1**; its pre-check runs as the co-runner PRE-R with a jump-the-queue condition (§7); instrument corrected by the judge (exact SDP/SOS on a half-line, not LP, §3)

#	merged candidate	sources	fate
K2	**COSMIC-RG, last bounce or eternal cycling in classical sequential growth; the MORS density conjecture**	cosmology 2 ≡ adversary survivor C2	SHORTLIST 3, runner-up 2 (Borel–Cantelli hazard registered as its first conjunct)
T1	**HIDDEN FREENESS, the exact census of secretly free spin models at v ≤ 7**	statistical 1 ≡ adversary survivor T1	SHORTLIST 4, runner-up 3 (sector-wise registration first)
S1	CS-PHASE, the exact Lorentzian sum over all finite causal orders	spacetime C1 (probe P-CS executed, F2 refuted) ≡ adversary S1	**ENGINE BUILD only**, killed as a front by (h) (the KR regime is unreachable at n ≤ 12 by the scout's own refuted forecast); a data note if the owner wants the causal-set instrument
Q3	6d supergravity finiteness, exact certification of the non-abelian theorem's numerical step and LP bound	qft C3	DUTY (the abelian question needs a principle, not an engine)
N2	HOLO-WITNESS-SIM, docs 08/12's boundary-readability contrast as a simulator protocol	instruments C2	DUTY (zero computed content; experiment-facing note)
K5/A2	CMB-WITNESS, a cosmological Theorem W; its strong form (a second non-commuting observable)	cosmology 5 ≡ adversary D-COUNT + watch A2	DUTY/WATCH (one commuting record, the doc-23 one-basis lemma; the dynamics class belongs to its authors)
T5	certifying the inverse Bethe ansatz at L = 5, N = 3	statistical 5	DUTY
Q4	the Standard Model's chiral content on a finite lattice, exactly	qft C4 ≡ adversary watch	WATCH (DECISIVE bigness, no object to compute on, test (a))
A1	an explicit small Tsirelson separation ($C_{qc} \neq C_{qa}$ at a finite scenario)	adversary §7	WATCH (no instrument; no computable upper bound on C_{qa})
F1	CAUSAL–MAGIC, SO-discrimination optimum vs causal value of a classical loop	foundations C1	*KILLED by computation (adversary P1, adopted): $P_{SO} = 7/8 = (1 + 3/4)/2$ is a one-bit-erasure corollary (test (i))**; the law-shape kept as a co-runner data row (§6 M-Λ8(ii)), never a front
S3	BABY-SECTOR, the two-boundary-inaccessible sector as a non-stabilizer threshold	spacetime C3	**KILLED by computation (adversary P2, adopted): opens at ONE generic cross-cut gate, never under a single Pauli rotation, "threshold" = whether a logical commutes with the gate (test (d))**
K1	CYCLIC-ARITHMETIC, does exact periodicity make Boltzmann fluctuations rarer?	cosmology 1	**KILLED by computation (adversary P5, adopted): at $E_k = k$ the registered macrostate decides the direction (1302 of 2048 sign patterns below generic, the aligned one 23/3× above)**; the integrality census is arithmetic data
T3	the topological (Betti-number) floor of biological accuracy	statistical 3	**KILLED by computation (adversary P3, adopted): a futile downstream cycle raises b_1 and leaves the error bit-identical, the exponent counts discriminating cycles (Hopfield/Ninio), $1 + b_1$ only on cascades (test (e))**
I2	RELATIONAL MAGIC, a conservation law magic + frame coherence under non-abelian QRF changes	information 2	**KILLED by computation (adversary P4, adopted): the same magic jump (negative mass 16/9, mana ln 41/9) at two frame states with coherence drops ln 3 and ln 27, no additive law (test (j))**
I1	MAGIC OF THE GAUSS LAW, is the non-stabilizer cost of non-abelian gauge invariance convention-free?	information 1	KILLED by definitions (adversary, confirmed by the judge): the two orientations differ by edge-wise group inversion, a quadratic (non-Clifford) permutation of Heis(3), Clifford-covariant measures are convention-laden by construction; the scout's own F10 is that corollary computed; the convention-free residue is the occupied nonlocal-magic genre
S2	LUNCH-NEG, the Python's-lunch exponent as exact odd-prime negativity	spacetime C2	KILLED (h)+(d): integer "areas" 1–3 fit no exponent; the registered basis family decides (BPP's own caveat); single-bond negativity factorizes (test (b))
S5	DISC-LOR, light-cone-irregular Regge configurations exact on a small complex	spacetime C5	KILLED (d)/(a): the branch sign at an irregular bone is a registration; bones with ≤ 2 simplices are below the regime (NOT-INSTANTIABLE)
K3	VOLUME-BOUND beyond slow roll	cosmology 3	KILLED (d): the USR cell is defined by removing the backreaction rule whose content the bound is, the forecast "FAILS" is a corollary of the registration
T2	the PXP nullspace hierarchy	statistical 2	KILLED (h): the counting conjunct decided by the scout's own probe (symmetry-forced); "finite or infinite hierarchy" is an $N \to \infty$ statement
T4	self-replication as a law of rule space	statistical 4	DECLINED (d): the self-replicating condition is informal and any exact formalization decides the small cases; DECISIVE bigness recorded
F5	relational time of arrival on the house clock	foundations C5	DECLINED (c)/(d) and re-mining: the observable is the Hosseini–Lock sector-wise conditioning map (a registration); the modal outcome is the PW identity's corollary; the line is spent (doc 29 §7)
Q2	the missing transformation (ϕ^4 period coincidences)	qft C2	CLOSED by the scout's executed closure test (NON-LOCAL-6 at theorem grade; the local rung is dead; trigger = Brown–Panzer–Yeats)
N3	FLOQ-TOWER	instruments C3	KILLED by the scout's own probes (fast regime label-trivial; adiabatic regime MRH's linear law + the CF definition; readout ill-posed between, lesson (h′))
N4, N5, N6	FRAG-COMM; REVIVAL-FLOORS; ARITH-PORTS	instruments C4–C6	DECLINED (service row; cite-and-sharpen rider; banned Tame shape + 10^2–10^4× below the record)
Q5, Q6, Q7	Coon unitarity; cosmic Galois; algebraic bootstrap boundaries	qft C5–C7	DECLINED (native-exactness kill (g); no instrument; purgatory)
F2, F3, F4, F6	coordination cost; odd-prime all-vs-nothing; sequential absoluteness; objectivity vs QEC	foundations C2, C3, C4, C6	DECLINED (INCREMENTAL; the modal outcomes are numbers, typed failures, lifted facets, saturation, each owned by an active group)
S4	HEC-RAY (the six-party entropy cone)	spacetime C4	DECLINED (highest exact occupancy of the lane; certification of others' rays)
K4	BIANCHI-IX-CERT	cosmology 4	DECLINED (weeks of build for a certificate inside one quantization scheme; truncation errors may not certify)
I3, I4, I5, I6	contextuality ⇒ SSB; contextuality density; magic of heat; S-matrix magic loci	information 3–6	DECLINED (INCREMENTAL censuses; occupied; I6 is a doc-21 rider)

#	merged candidate	sources	fate
-	the 2026-08-01 survey's ten candidates, re-tested	adversary §3.8	none re-enters (the witness line delivered; the rest data, engineering, or decided by definitions, e.g. Lorentz-invariant discreteness: a finite stencil on an integer lattice cannot be invariant under an infinite arithmetic Lorentz subgroup)
-	every DQ2/DQ3/DQ4 kill	docs 22 §6.2, 26 §3, 29 §3	unchanged

Scout disagreement, adjudicated. Six of the seven lane scouts ranked a FIELD candidate first in their own lane; the adversary killed five of those seven rank-1/rank-2 candidates by computation inside a morning (CAUSAL–MAGIC, BABY-SECTOR, CYCLIC-ARITHMETIC, the Betti floor, RELATIONAL MAGIC) and one by definitions (MAGIC OF THE GAUSS LAW), and found no DECISIVE front on any instrument the house has or could build in a cycle. **The judge checked the adversary's kills rather than counting them** (§4: each kill's mechanism re-read against the lane's own registration; two of them, F1 and I1, are kept with a judge's rider that preserves a cheap data row) and then checked the adversary's four survivors against the literature the scouts had not read in full. That second check changed the ranking's substance but not its order: the instruments scout's LAMBDA-3 is a question the field's own authors defined in July 2024 and never computed (Zurel–Heimendahl 2407.10349: the odd-prime CNC phase space, its classification theorem, no numerics at any (n, d)), which both anchors it and sharpens it (§5.2); the qft scout's REGGE-EXACT lives on an exact semidefinite (sum-of-squares) instrument, not on the exact LP the scout priced (§3), so its "one to two days" is a week and its pre-check acquires a zeroth conjunct. The judge sides with the adversary on altitude: **nothing in this pool is a sentence about the universe at the altitude of Theorem W, and the recommendation says so in its first line (§5).**

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2. The scoring matrix, every candidate (compact rows)

Axes (doc 22 §1 + §6.0; doc 26 §2; doc 29 §2): **BIG** (DECISIVE / FIELD / INCREMENTAL / DUTY; the owner's bar = a sentence about how the universe works at Theorem-W altitude) · **TRACT** (a certified first computation within one program cycle, named) · **GROUND** (occupancy / scoop, graded) · **TIME** (named triggers) · **INSTRUMENT** (native? exists or must be built? cost) · **PRE-CHECK** (the concrete, cheap, discriminating computation showing the first question is not decided at freeze, EXECUTED / UNRUN / FAILED / NONE; a candidate without one is inadmissible as a front) · **KILL** (can it fail honestly, cheaply, with a typed outcome). One line per candidate; the full rows for the shortlist are in §3.

id	candidate	BIG	TRACT	GROUND	TIME	INSTRUMENT	PRE-CHECK	KILL	fate
N1	LAMBDA-3 (the CNC sector at two qutrits)	FIELD-lite (foundations)	HIGHEST: exhibit in hand (18 scout + 22 judge certified non-CNC vertices); closed-set census done (40,536 sets, 0.1 s); first question = exact LP with Farkas certificates; one week + two legs	MEDIUM-HIGH framing (Zurel–Heimendahl own the construction; no numerics posted since 2024-07; Okay listing NOT RUN)	none hard; a ZH follow-up with numerics is the scoop	I-p3 + a one-week LP/orbit layer; native odd prime; exists in parts (probe D; J-B/J-C)	**EXECUTED** (scouts' probe D; judge's J-B, J-C1, J-C2, the literature read), per conjunct in §5.2	honest, typed, cheap (KΛ-0..KΛ-6)	★ RECOMMENDED
Q1	REGGE-EXACT	FIELD-conditional (a theorem would say consistency selects linear trajectories order by order)	MEDIUM: exact SOS/SDP on the half-line, not LP (judge's correction); ~a week to the first exact optimum	HIGH (Riva, Huang, Berman–Geiser, Cheung–Remmen, Elvang); scoop HIGH	an analytic finite-order paper by that line	to build (exact Positivstellensatz certificates, the doc-29 variant-6 pattern: float locates, exact certifies)	UNRUN; kill prior ~65% (the paper's "close to" wording); zeroth conjunct added: the continuum treatment must be frozen exactly first (else a discretization choice decides, test (d))	honest (K1 purgatory / K2 forced-by-construction / K3 breaks at n = 3 / K4 bound already optimal)	runner-up 1; co-runner PRE-R
K2	COSMIC-RG	FIELD-minus (analysis of a map; cosmology through Sorkin's heuristic)	HIGH for the fate cell (exact rational CSG probabilities, n ≤ 9; days)	LOW on the conjecture (untouched since 2001); Dowker–Zalel–Surya absorb fast	none	to build (days); exact rational; native census style	UNRUN; first conjunct = the adversary's Borel–Cantelli hazard (a two-line lemma if $m_n \to \infty$ is one, forecast "note" ~60%) + the Tauberian literature check	honest (K1 Tauberian / K2 Borel–Cantelli / K3 posts too rare)	runner-up 2
T1	HIDDEN FREENESS	FIELD-minus (a classification in integrability; the free/interacting boundary)	HIGH for the census (Minkowski certificate ran; v ≤ 7 in a cycle); symbolic elimination the cost	HIGH on constructions (Chapman/Elman/Ruh Oct 2026; Pozsgay + AI assistant); MEDIUM on the census	6–12 month scoop clock (recognition is the authors' named next problem)	exists in substance (≈250 lines, two primes); the ring-sector registration hazard found	EXECUTED (certificate recognizes FFD/XY, rejects chaotic Ising; the claw not free on 192 grid points; filter	honest (K-A1 only known classes / K-A2 all path-support-certified / K-A3 scoop / K-A4	runner-up 3

id	candidate	BIG	TRACT	GROUND	TIME	INSTRUMENT	PRE-CHECK	KILL	fate
							necessary-not-sufficient)	elimination infeasible)	
S1	CS-PHASE	FIELD in discrete QG as a dream; INCREMENTAL as deliverable	HIGH for n ≤ 10 tables (generator ported to C for n ≤ 12)	MEDIUM framing (Carlip, Surya, Glaser, Dowker, Eichhorn); in-class NONE	George–Yeats / Eichhorn citers	to build (days); exact integer Laurent polynomials, certified zeros	EXECUTED (P-CS: F1/F3/F4 confirmed, **F2 refuted**, the KR regime unreachable), which is exactly test (h)	honest but the modal outcome is KC-2 NOT-DECIDED-BELOW-CAPS	engine build, never a front
Q3	6d finiteness certification	DUTY (hardens a published theorem); DECISIVE dream not engine-decidable	HIGH (exact dual certificate of T ≤ 3003; the Dai–Freed numerical step as a census)	Hamada–Loges, Vafa school	-	exists (Diophantine/LP engines)	EXECUTED by reading (test (h) of the qft lane: the abelian question needs a principle)	-	DUTY
N2	HOLO-WITNESS-SIM	DUTY (experiment-facing; Paper C/F acquires a laboratory face)	HIGH (rows are committed certificates)	none on the lattice statement	-	exists (closeduni/holography rows)	zero computed content by design (test (c) fires as for every duty)	feasibility note either way	DUTY
K5/A2	CMB-WITNESS (+ strong form)	DUTY/WATCH (DECISIVE-shaped strong form has no observable)	-	HIGH (Oppenheim group; Sanz; the quantumness crowd)	a tensor detection / 21-cm claim	not house-native (continuum CQ channel)	decided at the statistics level (one commuting record); the live class is its authors' next paper	-	DUTY/WATCH
T5	inverse Bethe ansatz at L = 5, N = 3	DUTY (a size-limited certificate or a refutation)	HIGH (days; docs 16/17 machinery)	LOW–MEDIUM	-	exists	the N = 3 identity is the authors' conjecture, not the N = 2 theorem's corollary	honest	DUTY
Q4	the Standard Model on a finite lattice	DECISIVE	NONE (construction, not computation)	MAXIMAL	an exact 3+1d construction with finite anomaly arithmetic	none	NONE (test (a))	-	WATCH
A1	explicit small Tsirelson separation	DECISIVE	NONE	-	a posted example or a C_qa upper-bound technique	none	NONE	-	WATCH
F1	CAUSAL–MAGIC	was FIELD; INCREMENTAL residue	HIGH (the adversary's exact DP exists: 765 s)	VERY HIGH (Kunjwal line, three papers in five weeks)	any quantitative SO/causal posting	exists (adversary P1)	FAILED: first instance forced by a one-bit-erasure count (test (i))	-	KILLED as a front; a second-instance data row (§6)
S3	BABY-SECTOR	was FIELD-minus; INCREMENTAL residue (genericity census)	HIGH (exact Q(i) algebra; adversary P2)	HIGHEST framing of the lane	Mori–Yoshida	exists	FAILED: decided by the gate family's commutation structure (test (d)); two-sided implementability (test (l))	-	KILLED
K1	CYCLIC-ARITHMETIC	was FIELD; INCREMENTAL/arithmetic residue	HIGH	MEDIUM (Carroll group; Short group)	a Carroll follow-up	exists (adversary P5)	FAILED: the registered macrostate decides the direction (test (d))	-	KILLED
T3	Betti floor	was FIELD; INCREMENTAL residue	HIGH	MEDIUM	a general-topology theorem by Çetiner	exists (adversary P3)	FAILED: a futile cycle leaves the error bit-identical (test (e))	-	KILLED
I2	RELATIONAL MAGIC	was FIELD-minus	HIGH (I-G27 built)	MEDIUM-HIGH (one author holds both toolkits)	Cepollaro	exists (information probe A + adversary P4)	FAILED: two instances, no additive law (test (j))	-	KILLED

id	candidate	BIG	TRACT	GROUND	TIME	INSTRUMENT	PRE-CHECK	KILL	fate
I1	MAGIC OF THE GAUSS LAW	was FIELD-minus	HIGH	MEDIUM-HIGH (Hamma group named orientation as future work)	Hamma follow-up	exists (I-G27)	FAILED by definitions: orientation conventions differ by a non-Clifford permutation; ΔM across orientations is a corollary-or-coincidence (test (d))	-	KILLED; INCREMENTAL rider
S2	LUNCH-NEG	FIELD-minus toy	HIGH	HIGH framing (Parrikar ×3; Headrick–Swingle)	BPP's promised Petz follow-up	exists (doc 20/21 engines)	FAILED: (h)+(d)+(b)	-	KILLED
S5	DISC-LOR	FIELD-minus	MEDIUM	MEDIUM	-	to build	FAILED: convention-decided (d); NOT-INSTANTIABLE at exact sizes (a)	-	KILLED
K3	VOLUME-BOUND	FIELD	MEDIUM	HIGH activity	Seo / Guleryuz / Tomberg	to build (days)	FAILED: the USR cell removes the rule whose content the bound is (d)	-	KILLED
T2	PXP nullspace	FIELD dream; INCREMENTAL data	HIGH	HIGH (Motrunich, Desaules, Essler)	Ivanov–Motrunich's pending states	exists (probe P-B)	FAILED: counting conjunct symmetry-forced (executed); the hierarchy is N → ∞ (h)	-	KILLED
T4	self-replication law of rule space	DECISIVE-shaped	LOW	MEDIUM	-	weeks	FAILED at the definition gate (d)	-	DECLINED
F5	relational arrival	FIELD-shaped	MEDIUM	MEDIUM	-	exists (reldyn)	FAILED (c)/(d); re-mines a spent line	-	DECLINED
Q2	the missing transformation	FIELD-minus	-	MAXIMAL	Brown–Panzer–Yeats posting	built today	EXECUTED → local rung DEAD (NON-LOCAL-6)	ruled	CLOSED; watch
N3	FLOQ-TOWER	would have been FIELD-minus	-	MEDIUM-HIGH	-	would have been new	EXECUTED → FAILED (three probes; lesson (h′))	ruled	KILLED
N4 / N5 / N6	FRAG-COMM / REVIVAL-FLOORS / ARITH-PORTS	service / INCREMENTAL / banned shape	as-is	HIGH / spiral-drive group / specialists	-	exists	(d) / (g) / executed (probe A: 10^2–10^4× below 2/7)	-	DECLINED
Q5 / Q6 / Q7	Coon unitarity / cosmic Galois / algebraic boundaries	INCREMENTAL / DECISIVE-no-instrument / purgatory	-	HIGH / authors' own / numerics	-	-	(g) / none / (h)	-	DECLINED
F2	COORDINATION COST	FIELD-lite dream; note modal (~55% by its scout)	HIGH for the p = 3 thresholds	MEDIUM	-	to build (days)	admissible but the modal outcome is a number	KC-1	DECLINED (INCREMENTAL)
F3	odd-prime all-vs-nothing	INCREMENTAL (typed failure likely)	HIGH	VERY HIGH (Banik group one step from qudits)	a qudit paper	sympy exact LP	admissible; the qubit protocol provably does not transport	KA-1	DECLINED
F4	sequential absoluteness facets	INCREMENTAL	MEDIUM (double description to build)	HIGH (the LF owners)	-	to build	admissible; forecast "all lifted"	KS-1	DECLINED
F6	objectivity vs QEC census	INCREMENTAL	HIGH	HIGH (Cao, Koh)	-	small build	admissible; saturation forecast 60%	KD-1	DECLINED
S4	HEC-RAY	INCREMENTAL → FIELD-minus	MEDIUM	HIGHEST exact occupancy	the field's next	re-implement	chordality first	KH-1..3	DECLINED

id	candidate	BIG	TRACT	GROUND	TIME	INSTRUMENT	PRE-CHECK	KILL	fate
					inequality list				
K4	BIANCHI-IX-CERT	FIELD	LOW (weeks)	MEDIUM	-	to build (weeks)	admissible; truncation certifiability doubtful	K2	DECLINED (cost)
I3	contextuality ⇒ SSB	INCREMENTAL → FIELD-minus	HIGH	MEDIUM-HIGH (UESTC)	-	docs 15/16 engines	admissible; forecast refutes the universal reading	K1	DECLINED
I4 / I5	contextuality density / magic of heat	INCREMENTAL	MEDIUM / HIGH	HIGH / HIGH	-	new Walsh tooling / exact LP	admissible	-	DECLINED
I6	S-matrix magic loci	INCREMENTAL (doc-21 rider)	HIGH	HIGH (Low; White; Savage)	-	doc 21	-	-	DECLINED

Reading the matrix. Only four rows carry all three of a non-corollary first question, an existing-or-week instrument, and a pre-check that can come out either way: N1, Q1, K2, T1. Of these, only N1 has its pre-check EXECUTED on the live object (the exhibit) with the literature anchor read in full today, and only N1's first computation is guaranteed non-empty (the vertex census and the control rows exist whatever the membership answer). That is the doc-26 cost asymmetry, a first rung that cannot come back empty, every higher rung open, and it decides the order among the four.

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3. Ranked shortlist (typed matrix)

1. LAMBDA-3, where the constructible classical model of odd-prime quantum computation ends ★ RECOMMENDED

axis	grade	substance
BIG	**FIELD-lite (foundations)**, never cosmos-grade, said plainly	Every quantum computation with magic states admits a finite hidden-variable description on the Λ-polytope (Zurel–Okay–Raussendorf–Heimendahl, Quantum 8, 1323 (2024), Theorem 1: every state is a probability distribution over Λ's vertices; Clifford gates and Pauli measurements are stochastic). The only CONSTRUCTIBLE part of that description at odd prime is the CNC phase space of Zurel–Heimendahl (2407.10349, July 2024): noncontextual pieces glued along commuting observables, classified by their Theorem 1 (subspaces of Z_d^{2n}, and pencils ∪_k⟨a_k, I⟩ over an isotropic I with pairwise non-commuting generators), whose nonnegative sector "strictly contains the subtheory described by nonnegative Wigner functions". At n = 1 that sector is everything ($\Lambda_1(3)$ has 81 vertices, all CNC, scouts' probes B/D; ZH's conclusion makes "unit-modulus Pauli coefficients ⇔ CNC point" a theorem). **The question: does it still host every two-qutrit state, or does the escape from constructible classical description begin at two particles, and with which states (product or entangled), at what copy number?** The field printed no number at any (n, d): the only datum is the qubit precedent cited by ZH (two copies of the qubit magic state inside, three outside, Raussendorf et al. 2020). The honest ceiling: a located boundary (Gross simplex ⊂ CNC hull ⊂ Λ) with certified states on each side at the first odd-prime two-particle instance, and the copy-number threshold at d = 3 against the qubit 3, "where the constructible classical description of quantum computation ends", never "where quantum advantage begins", never an efficiency sentence.
TRACT	**HIGHEST of pool**	The exhibit (conv(V_CNC) ⊊ $\Lambda_2(3)$) is in hand twice over: the instruments scout's 18 non-cnc vertices (probe D, 5 s) and the judge's 22 (J-C, own route, 30 s, three cross-route class matches). The CNC supports are enumerated: 40,536 closed line-sets in 0.1 s (J-B), with the structure ZH's Theorem 1 predicts (40 lines, 40 planes, 40 hyperplanes a^⊥, E; pencils ⟨a⟩ + 2 or 3 planes; partial ovoids of size ≤ 7). The first question is an exact rational LP per registered state with a Farkas certificate on failure. One week to the pilot's table; two verifier legs.
GROUND	**MEDIUM-HIGH framing / LOW in-class**	The construction belongs to Zurel–Heimendahl (and the Λ program: Raussendorf, Okay, Zurel, Ipek); their 2025–26 postings (Zurel 2602.22336 v2 Sep 2026, 2603.18560, 2610.06607; Raussendorf 4 papers; Heimendahl none) contain no odd-prime vertex or membership computation; 2110.12318 §7 and 2407.10349's conclusion list the vertex characterization, the scaling with n and the ξ-bound as open, not the state-membership question (which they never pose numerically). The Okay listing is NOT RUN (HTTP 429 ×3), typed as the one net gap. Scoop risk: the membership computation is a week for the authors; the house's delta is the exact census, the certificates, the registered-state question with declared parity, and two adversarial legs.
TIME	none hard	A ZH follow-up with numerics is the only trigger; the Perimeter meeting is not one (§0).
CONT	HIGH (docs 19/20/21: the house's odd-prime Wigner/Clifford machinery, the semantics guards 2110.12318 / 2407.10349 that doc 20 already carries, the located carriers as later n = 3 rows)	The question re-prices doc 20's NEGATIVITY-REQUIRED verdicts in Λ-language without touching them: the carriers are nonnegative in Λ by construction; which vertices carry them is a later data lane (§6 M-Λ6), never the front.
KILL	honest, cheap, typed	KΛ-0 control failure (method); KΛ-1 enumeration/LP caps (NOT-DECIDED-BELOW-CAPS, caps printed); KΛ-2 literature-decided (the owed full-text residues); KΛ-3 thinness (CNC-HOSTED-AT-2 with the n = 3 rung infeasible → a positive note); KΛ-4 budget; KΛ-5 wording; KΛ-6 growth bans.
INSTRUMENT	**I-p3 + a one-week LP/orbit layer; native odd prime; exists in parts**	Probe D + J-B + J-C are the seed (own planes; exact tight-system solve; exact Z[ω] modulus and closure tests; closed-set DFS); doc 20/21 symplectic machinery as isolated sha-verified copies; sympy 1.14 exact `lpmax` / `lpmin` on `python3.12`, or an own rational simplex, with HiGHS to locate.
PRE-CHECK	**EXECUTED, per conjunct, §5.2**	Not decided by definitions (the CNC hull is a computed convex set; the registered states are fixed before enumeration); not by the readout (Λ's vertices are convex-geometric objects of the full two-qutrit space); not by a certificate in hand (the Gross-sector verdicts decide membership in a strict sub-polytope only); not by the literature (read in full today, no numerics); not by locality or an ancilla lemma for the OPEN rows (the product-with-stabilizer rows ARE decided INSIDE by the ancilla lemma and are relabelled controls). What remains open is exactly the membership of the product-of-magic rows and the entangled rows, with the qubit precedent as the only prior.

2. REGGE-EXACT, is "linear Regge trajectories from consistency" a theorem at every finite bootstrap order?, runner-up 1

axis	grade	substance
BIG	**FIELD-conditional**, the highest universe-content of the pool if it lands	A finite-order theorem would make Regge linearity a consequence of unitarity + crossing + boundedness rather than a stringy input: a structural fact about which theories can exist. The k_max → ∞ limit is not finite-certifiable; a landed

axis	grade	substance
		theorem is a statement about every finite truncation, never about the limit.
TRACT	MEDIUM, **the judge's correction**	The scout priced "an exact LP in the couplings with rational Gegenbauer data". With a continuum above M^2 (a positive spectral density), the dual is positivity of a rational combination of kernels on a half-line, an exact sum-of-squares (Positivstellensatz) certificate, i.e. an exact SDP, not an LP; a grid discretization of the continuum would make the optimum's location a discretization choice (test (d)). The doc-29 variant-6 pattern (float locates, exact rational SOS certifies) applies, at a week, not days.
GROUND	HIGH; scoop HIGH	Huang–Ricossa–Riva–Tsai 2510.07991 (SDPB, k_max = 10, "close to"), Berman 2410.01914, Berman–Geiser 2412.17902 ("not optimal yet"), Wan–Zhou 2605.11084, Calisto–Cheung–Remmen 2605.20319; an analytic finite-order paper is their natural next step.
TIME	that paper	-
CONT	LOW (no house line; the house brings the discipline and exactness)	-
KILL	honest	K0 (new) the continuum treatment cannot be frozen exactly → not a house question; K1 only approximate (prior ~65%) → purgatory; K2 exact but forced by the finite-state identity (d) → DAF; K3 breaks at n = 3 → data; K4 Berman–Geiser already optimal → nothing.
INSTRUMENT	to build (a week): exact rational LP in the couplings at fixed masses + exact SOS positivity on $[M^2, \infty)$ for the continuum + a one/two-variable semialgebraic optimum over the masses	-
PRE-CHECK	UNRUN; runs as the co-runner **PRE-R** (§6 M-Λ8(i)) under a one-week cap	(0) freeze the continuum treatment exactly; (i) control: Berman–Geiser's SMC/SSC implied by the finite-order problem; (ii) smallest 2-state truncation: is the exact maximizer over m_1^2 at $2m_2^2 - M^2$?; (iii) the 3-state peak at $(m_1^2 + m_3^2)/2$. Exact at n = 2, 3, 4 and not forced by construction ⇒ runner-up 1 jumps the queue (§7).

3. COSMIC-RG, last bounce or eternal cycling in classical sequential growth, runner-up 2

axis	grade	substance
BIG	FIELD-minus	A discrete quantum-gravity program's own cyclic cosmology (couplings renormalized by the universe's history; Sorkin's cosmic-big-number mechanism hangs on it), but the theorem is about the linear-projective map M on coupling sequences; the cosmology reading rides Sorkin's heuristic (the compound process).
TRACT	HIGH for the fate cell (days); the density conjecture is analysis	Exact rational CSG transition probabilities; exact iteration of M; exact enumeration at n ≤ 9.
GROUND	LOW on the conjecture (MORS gr-qc/0009063 untouched since 2001; Dowker–Zalel 2212.01149 "yet to be implemented via computer simulations")	-
TIME	none	-
CONT	LOW	-
KILL	honest	K1 a Tauberian/binomial-transform theorem decides the density statement (checked before computing); K2 Borel–Cantelli closes the fate cell as a note (the adversary's forecast ~60%); K3 posts too rare at n ≤ 9 (purgatory).
INSTRUMENT	to build (days); exact rational; the doc-09 census style	-
PRE-CHECK	UNRUN; first conjunct = the Borel–Cantelli lemma (is "m_n → ∞ for t_n^{1/n} → 0" a two-line estimate?) + the Tauberian literature check	If both close, the candidate is a note; if the fate cell survives, it is a FIELD-minus front with a cosmology rider.

4. HIDDEN FREENESS, the exact census of secretly free spin models, runner-up 3

axis	grade	substance
BIG	FIELD-minus (a classification in integrability; the free/interacting boundary as the non-thermalizing/thermalizing boundary)	Ruh–Elman–Chapman 2610.03557 (2 Oct 2026): "unknown if necessary"; Conjecture 2 "iff"; recognition complexity open.
TRACT	HIGH for the census (certificate exists and ran); symbolic elimination at v = 6–7 is the cost	-
GROUND	HIGH on constructions; MEDIUM on the census; a 6–12 month scoop clock	-
TIME	the authors' next paper	-
CONT	LOW–MEDIUM (doc 17's spectral-field-degree practice; docs 16–18 toolkit)	-
KILL	honest (K-A1..K-A4)	The modal outcome (loci only inside known classes at v ≤ 7) is a data note.
INSTRUMENT	exists in substance (statistical scout's three probes)	-
PRE-CHECK	EXECUTED (the certificate's teeth shown on FFD/XY/chaotic Ising/the claw); the ring-sector registration hazard found and must be frozen first	-

5–9. The engine build, the duties and the watch items (compact)

#	candidate	grade	the deciding fact	fate
5	CS-PHASE	INCREMENTAL deliverable; FIELD dream	P-CS's refuted F2: the height-≤3 share falls 0.94 → 0.41 over n = 4..8, the Kleitman–Rothschild regime the dream question lives in is unreachable by exact enumeration (n ≤ 12); every reachable deliverable is a table of integer Laurent polynomials, certified zeros and class ratios whose physics reading needs n → ∞ (test (h))	engine build only (§7 item 4); never a continuum sentence
6	6d finiteness certification	DUTY	the abelian landscape is DAF-infinite under every exact condition (Taylor–Turner families survive Dai–Freed except residue classes); only the non-abelian theorem's numerical step and its LP bound are engine-decidable	DUTY
7	HOLO-WITNESS-SIM	DUTY	every row is a committed certificate; the only open conjunct is hardware feasibility	DUTY (05a/21a-pattern note)

#	candidate	grade	the deciding fact	fate
8	CMB-WITNESS / its strong form; inverse Bethe	DUTY/WATCH; DUTY	one commuting record (doc 23's one-basis lemma); the N = 3 identity is the authors' conjecture at that size	DUTY/WATCH; DUTY
9	SM on a lattice; explicit Tsirelson separation	DECISIVE, no instrument	construction (test (a)); no computable upper bound on C_qa	WATCH

4. Kills and declines, ruled honestly, with the deciding certificate, definition or construction each

The adversary's five computed kills were re-read by the judge against each lane's own registration (the forecasts, the parity declarations and the scripts' docstrings); each is adopted, two with a rider that keeps a cheap data row alive. The judge adds no new kill by computation and two by reading (Q1's instrument; N1's proxy, both relabellings, not kills).

1. **CAUSAL–MAGIC (F1), KILLED as a front; the law-shape survives as a data row.** Adversary P1 (exact Q(i), 765 s): P_causal*(AF/BW) = 3/4 over all 196,608 deterministic dynamical-order strategies; P_SO* = 7/8 exhaustively over all 63 Paulis, informative measurements, converged at depth 3 (memo 379 identical at depths 3–5); the identity (1 + P_causal*)/2 = P_SO* holds because exactly one basis bit is lost on each failing input and recovered by a coin flip, Theorem 2's own mechanism counted (test (i)). The foundations scout's dream ("one formula at every prime") dies: at the first instance the formula is the erasure count. **Judge's rider:** the law-shape P_SO* = (1 + P_causal*)/2 is a crisp conjecture over all stabilizer product bases that the adversary's DP tests at a second and third instance in minutes; it is registered as the co-runner data row M-Λ8(ii) (§6), never a front (occupancy VERY HIGH: Kunjwal line, three papers in five weeks; the authors can write the proof in a page), with the trigger KQ-3 (any quantitative SO/causal posting → cite-and-stop).
2. **BABY-SECTOR (S3), KILLED (d) + (l).** Adversary P2 on [[4,2,2]] and [[5,1,3]] with the two-sided Harlow implementability condition ([O_R, P′] = 0; Knill–Laflamme as the independent check, duality consistent 10/10): a single Pauli rotation exp(iϕP) keeps exactly the side logicals commuting with P (survivor lemma); a gate with no commuting logical on either side opens the sector at ONE gate (CP·Rxx on [[5,1,3]]; the four-axis gate on [[4,2,2]]). "Threshold" is whether some logical commutes with the gate, a definition, not a law. The spacetime scout's own test (h) had already struck the single-side family; the cross-cut family is decided the same way one level up. Residue: a genericity census (the scout's KB-2), INCREMENTAL.
3. **CYCLIC-ARITHMETIC (K1), KILLED (d).** Adversary P5: at E_k = k (k ≤ 11) with uniform amplitudes the period-averaged fluctuation variance of a macrostate probability ranges from 5/5184 to 253/5184 across the 2048 sign patterns, straddling the generic 11/1728 (1302 patterns below, the aligned one 23/3× above): commensurability fixes no direction; the registered macrostate does. The time average is the diagonal ensemble for every spectrum (a one-line corollary the cosmology scout had registered as P1's premise). What survives is the integrality census of 2-local integer Hamiltonians, arithmetic data (Pythagorean su(2) blocks are the trivial family; the scout's own K1 names the Lie-algebraic obstruction), never cosmology.
4. **THE BETTI FLOOR (T3), KILLED (e).** Adversary P3 (nine-state exact CTMC, ε_eq = 1/10): a futile 3-state cycle attached downstream of the activated state raises b_1 of the downstream subgraph by one and leaves the proofreading error bit-identical at every drive (36 loop settings × 7 activation rates, an exact rational identity); the same cycle made discriminating lowers the error below ε^2 ($0.25\,\varepsilon^2$ at unit drive). The exponent counts downstream discriminating cycles (Hopfield 1974, Ninio 1975) and equals $1 + b_1$ only on cascades, a cascade coincidence. Çetiner's Theorem 1 stands as proven; its topological reading does not generalize.
5. **RELATIONAL MAGIC (I2), KILLED (j).** Adversary P4: the Heis(3) frame change takes $|+_3\rangle_F|0\rangle_S$ and $|+_{27}\rangle_F|e\rangle_S$ to states Clifford-equivalent to $\Sigma|a,b,ab\rangle/3$ (negative mass 16/9, sum-negativity 32/9, mana ln 41/9, the information scout's number, with the convention now quoted) with frame-coherence drops ln 3 and ln 27 respectively: no additive magic + coherence law for any coherence measure separating the two frame states; the only exactly conserved quantity under a permutation frame change is the amplitude multiset.
6. **MAGIC OF THE GAUSS LAW (I1), KILLED by definitions; INCREMENTAL rider for the Hamma line.** The two orientation conventions of a non-abelian link are related by edge-wise inversion $(a,b,c) \mapsto (-a,-b,-c+ab)$, a quadratic, non-Clifford, permutation of Heis(3); the physical subspaces are therefore non-Clifford-equivalent by construction, and the information scout's F10 (different Pauli spectra; envelope codes 243 vs 27) is that corollary computed. Any Clifford-covariant measure, ΔM included, is generically convention-laden; P-A2 can confirm the corollary or exhibit a coincidence. The judge confirms the adversary: the scout's own refutation-led findings (F6: the theta graph carries no magic; F9: the directed-cycle law is wrong) are the honest content of the probe and travel as data; the Appendix-C parity defect of 2601.15842 (P-A3) is a one-line verification duty, not a front.
7. **LUNCH-NEG (S2); DISC-LOR (S5); VOLUME-BOUND (K3); PXP (T2); self-replication (T4); relational arrival (F5)**, as the adversary ruled (§1 rows), each checked by the judge against the lane's text: S2's "areas" are integers 1–3 at ≤ 7 qutrits (no exponent is a certificate) and BPP's basis caveat makes the registered basis the decider; S5's branch sign is a registration and two-simplex bones are below the regime; K3's USR cell removes the backreaction rule whose content the bound is; T2's counting conjunct was decided by its own scout's probe (symmetry-forced at every N ≤ 16, two primes) and the hierarchy is an N → ∞ sentence; T4's Definition 2.6 decides the small cases; F5 re-mines the clock line doc 29 §7 called spent through a conditioning map that is a registration.
8. **CS-PHASE (S1), KILLED as a front (h); kept as an engine.** The spacetime scout executed the one pre-check that mattered and it refuted his own forecast F2: the height-≤3 share falls 0.94 → 0.41 (unlabeled) / 0.89 → 0.34 (labeled) over n = 4..8, so the Kleitman–Rothschild regime of the Carlip–Carlip–Surya theorems is nowhere near n ≤ 12; the KR-like proxy is ENHANCED ($q_8 = 1.70$) where the asymptotic theorem suppresses. Everything reachable is finite-n anatomy (the scout's own honest form), whose modal typed outcome is KC-2 NOT-DECIDED-BELOW-CAPS. **The judge does not dispute the engine:** the exact integer Laurent polynomials Z_n^{(2)}(x), Z_n^{(4)}(x) with certified zeros and per-class ratios are a sound build (days), and the probe's irreducibility of Z_8 (degree 76, no cyclotomic factor) is a datum the field lacks. A front would need a finite-n theorem shape (an exact transfer identity for Z_n, a crossover certified by a monotone invariant) that nobody, the scout, the adversary, the judge, can name today. It is listed in §7 as a build the owner may want for its own sake, with the bans (never "the path integral selects spacetime").
9. **REGGE-EXACT (Q1), SURVIVES, instrument relabelled.** The scout's "exact LP" is an exact SDP once the continuum above M^2 is a positive measure (dual positivity on a half-line ⇒ SOS certificates); a grid in s would make the optimum's location a discretization choice. The kill prior (~65%, "close to") stands; the candidate is a runner-up because its first computation can come back empty, not because it is small.
10. **LAMBDA-3 (N1), SURVIVES, re-posed (§5).** Two relabellings: (a) the instruments scout's "cnc-type = single Fourier modulus" was a proxy; by ZH 2407.10349's conclusion ("all Λ-polytope vertices whose Pauli-basis coefficients have absolute value one are CNC-type phase space point operators") together with its Theorem 3, it is a theorem, the proxy is promoted to the definition of record, and the judge's exact Z[ω] test with the closure check (J-C2: the single-modulus non-delta vertex has Pauli support $a^{\perp}$, a 3-dimensional subspace, closed under commuting sums, with the line ⟨a⟩ central) confirms the one instance both routes found; (b) the product-with-stabilizer rows ($|S\rangle\otimes|0\rangle$ and kin) are DECIDED INSIDE by the ancilla

lemma, Ω × ⟨z⟩ is of ZH's form (ii) with I′ = I ⊕ ⟨(0,z)⟩, so A_Ω^γ ⊗ |j⟩⟨j| is itself a CNC point, and are relabelled controls; the product-of-magic rows are NOT decided this way ($\Omega_1 \times \Omega_2$ is not closed in general; ZH: "a tensor product of CNC phase space point operators is generally not CNC", negativity super-multiplicative).

11. **The declined INCREMENTAL rows (F2, F3, F4, F6, S4, K4, I3, I4, I5, I6, N4–N6, Q5–Q7)**, as their scouts and the adversary ruled; the judge adds only that F2's odd-prime partitioning threshold m_n(3) and the ξ_max census of §5.3 are the same finite-geometry object seen from two doors (sets of pairwise non-commuting Paulis), so F2's one unclaimed number rides inside LAMBDA-3's data lane (M-Λ8(iii)) at no cost.
12. **The 2026-08-01 survey's ten candidates; every DQ2/DQ3/DQ4 kill**, unchanged (adversary §3.8; docs 22 §6.2, 26 §3, 29 §3).

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5. THE RECOMMENDATION, LAMBDA-3: where the constructible classical model of quantum computation ends (the first odd-prime two-particle instance)

Altitude, first line: this is FIELD-lite, foundations-grade, the quantum/classical boundary of computation with exact certificates, and not a sentence about the cosmos. The survey found no front at Theorem-W altitude on any instrument the house has or could build in a cycle (§8); this is the best discovery-shaped front it found, and it is recommended as exactly that.

> **Dream form**
>
> **Where does the classical description of quantum computation end?** Every quantum computation with magic states has a finite hidden-variable description: a probability distribution over the vertices of the Λ-polytope, updated stochastically by Clifford gates and Pauli measurements (Zurel–Okay–Raussendorf–Heimendahl 2024). The only *constructible* part of that description at an odd prime, the CNC phase space of Zurel–Heimendahl (2024): noncontextual pieces of phase space glued along commuting observables, hosts strictly more than Gross's Wigner function, and at one qutrit it hosts everything. **Does it still host every state of two qutrits, or does the escape from constructible classical description begin at two particles, and with which states, product or entangled, and at what copy number?**

> **Operational form**
>
> On $\Lambda_2(3) = \{W \in R^{81} : \Sigma W = 1, \Sigma_{u\in L} W_u \geq 0$ for each of the 360 affine Lagrangian planes L of $Z_3^4\}$ (the 360 pure two-qutrit stabilizer states; ZORH's definition, read today), let **V_CNC(2,3)** := {A_Ω^γ = (1/9) Σ_{b∈Ω} ω^{−γ(b)} T_b : Ω a CNC set of Z_3^4 per Zurel–Heimendahl Theorem 1, a subspace, or *∪{k=1}^{ξ}⟨a_k, I⟩ with I isotropic, a_k ∈ I^⊥ pairwise non-commuting, and γ a noncontextual value assignment on Ω}, enumerated exactly from the judge's census of its 40,536 closed supports; its convex hull* ***C_2 := conv V_CNC(2,3)*** *satisfies Wigner simplex ⊊ C_2 ⊊ $\Lambda_2(3)$ (left: the support-18 CNC vertex has entries −1/9; right: the 22 + 18 certified multi-modulus vertices). For a state list* ***S*** *frozen in the pilot docstring before any enumeration, controls INSIDE: the 360 stabilizer states, registered Wigner-nonnegative mixtures, |S⟩⊗|0⟩ and |N⟩⊗|0⟩ (the ancilla lemma: Ω × ⟨z⟩ is of form (ii), so A_Ω^γ ⊗ |j⟩⟨j| is a CNC point, a corollary, registered so it is never a finding); controls OUTSIDE: the 22 judge-certified and 18 scout-certified multi-modulus vertices (points of Λ, not states; the Farkas machinery must reject every one); open rows: R1 |S⟩⊗|S⟩, R2 |N⟩⊗|N⟩, R3 |S⟩⊗|N⟩ (|S⟩ = (|1⟩ − |2⟩)/√2, |N⟩ = (−|0⟩ + 2|1⟩ − |2⟩)/√6, the qutrit Strange and Norrell states; Wigner functions rational), R4 the entangled family D_f|+⟩|+⟩ with D_f = Σ{j,k} ω^{f(j,k)}|jk⟩⟨jk| for the registered non-quadratic* phase functions $f \in \{jk^2, j^2k, jk^2 + j^2k, j^2k^2\}$ over Z_3 (f = jk is Clifford, a control), R5 the maximal-mana two-qutrit pure states of Wang–Wilde–Su 2020 if that paper lists them (else typed NOT-REGISTERED), R6 twenty seeded random states with amplitudes in $\{0, \pm1, \pm\omega, \pm\omega^2\}$ (rational Wigner functions; exact LP needs exact data, Haar states are not registrable), **decide by exact rational LP, with a Farkas certificate on every failure, whether ρ ∈ C_2.** Second question, same engine: the Clifford-orbit census of the non-CNC vertices of $\Lambda_2(3)$ (canonical forms under $Sp(4,3) \ltimes Z_3^4$, 10^4 exact draws) and, per class, whether its Pauli-measurement update decomposes over found classes (CLOSED) or not (LEAKS), the "update rules" problem of Ipek–Okay 2312.10734 at the first odd-prime instance. Second rung (only on CNC-HOSTED-AT-2 for the product rows, or as a data lane): the copy-number threshold at d = 3, |S⟩^{⊗3}, |N⟩^{⊗3}, |S⟩|S⟩|N⟩ in C_3 := conv V_CNC(3,3) (729 coordinates, 30,240 facets; supports by Theorem 1 with symmetry; column generation with exact pricing). **Typed outcomes of equal standing: CNC-HOSTED-AT-2** (every registered state inside C_2, controls as forecast, the constructible model survives two particles; the escape, if any, begins at n ≥ 3, and the threshold rung runs); **ESCAPE-AT-2** (a certified two-qutrit state outside C_2 with its Farkas certificate and Clifford orbit, the first odd-prime state the constructible model cannot host; sub-typed ESCAPE-BY-PRODUCT, which would put the d = 3 copy threshold at 2 against the qubit 3, or ESCAPE-BY-ENTANGLED); **THRESHOLD-3** (second rung: n* ∈ {3, > 3} for the Strange/Norrell copies, typed per state); **NOT-DECIDED-BELOW-CAPS** (enumeration or LP caps hit; caps printed; never upgraded); plus the data outcomes VERTEX-CENSUS (orbits with multiplicities under caps) and UPDATE-CLOSED / UPDATE-LEAKS per class.

Mandatory ceiling riders, fused from day one. In-class: d = 3, n = 2 (n = 3 for the threshold rung), the registered state list; "constructible" means the Zurel–Heimendahl CNC phase space, nothing else; never "efficient" or "efficiently simulable" for anything (ZH's efficiency is conditional on an unproven polynomial bound on ξ, their open problem 3; 2110.12318 §4 makes no efficiency claim); never "not simulable", never "no nonnegative model exists" (the 2110.12318 / 2407.10349 guards doc 20 already carries: every state has a nonnegative Λ-representation by Theorem 1); never "quantum advantage begins at two qutrits"; "the escape from classical description" always with "constructible (CNC)" attached; the two-qubit Λ (eight Clifford orbits, two cnc, Okay–Zurel–Raussendorf 2104.05822) and the qubit copy precedent (two copies inside, three outside, Raussendorf et al. 2020 as cited by ZH) are quoted, never re-derived; a CNC-HOSTED-AT-2 outcome never feeds a "classical" sentence; licensing is never posting; defer-until-big governs every export.

5.1 Why this one, now

1. **Its first rung cannot come back empty, and its first question can go either way.** The exhibit ($C_2 \subsetneq \Lambda_2(3)$) is certified by two independent routes today; the support census is done; the control rows are decided by corollaries that the pilot regresses; the open rows are decided by an exact LP whose every answer is a certificate. The doc-26 cost asymmetry, with a floor.
2. **The field defined the object and never computed it.** Zurel–Heimendahl classified the odd-prime CNC sets (Theorem 1), proved the CNC points lie in Λ, proved the unit-modulus vertices are exactly CNC points (conclusion; Theorem 3), listed three open problems (composite d; scaling with n; the ξ bound), and printed no number at any (n, d). Their one quantitative sentence is the qubit precedent. The two-qutrit membership question is the natural next computation of their program and it is unposted as of 2026-10-28 (Zurel ×3 papers in 2026, none on it; Heimendahl none; Raussendorf none; Okay NOT RUN).
3. **It is the house's instrument.** Exact odd-prime Wigner functions over Q(ω), symplectic machinery, Clifford orbit censuses, exact certificates with adversarial verification, docs 19/20/21 built and verified all of it; the LP/Farkas layer is a week; the semantics guards the program needs are already the house's own riders. The delta over the authors is not cleverness but discipline: registered rows, declared parity, two legs.
4. **The question is a wall, not a bridge** (the house's pattern P3): a located boundary between three nested convex sets with certified states on each side, at the first instance beyond one particle, the same shape as docs 19–21's two-carrier localization, now applied to the field's own classical model

instead of the house's lattice.

5. **It composes.** With docs 19/20/21 it gives the odd-prime anatomy of classical explainability of computation at n = 2 (Gross simplex ⊂ CNC hull ⊂ Λ, with located states), and the threshold rung turns the qubit folklore "two copies in, three out" into a prime-indexed law or its refutation (§8).

5.2 The pre-check of the pre-check, per definition, per route, per conjunct, including the scouts' own wording (executed here)

(i) Per definition. *$\Lambda_2(3)$:* canonical, the 360 facets are the pure two-qutrit stabilizer states (2110.12318 §3, Eq. 11, read today; the scouts' and the judge's plane constructions agree on 40 Lagrangian subspaces × 9 cosets, each totally isotropic). *V_CNC(2,3):* defined by a published classification (ZH Theorem 1) plus value assignments; enumerable from the judge's 40,536 closed supports; "unit-modulus Λ-vertex ⇔ CNC point" is ZH's theorem, so the exact modulus test is a definition-equivalent certificate, not a proxy. *C_2:* a computed convex set, strictly between the Wigner simplex and $\Lambda_2(3)$ (both inclusions certified today, the support-18 CNC vertex has six entries −1/9; the 22 multi-modulus vertices are vertices of Λ outside V_CNC, hence outside C_2). *S:* frozen before enumeration; every registered state has a rational Wigner function (exact data). None of the four names an answer. **(ii) Per route.** The membership route's antecedent $\rho \in \Lambda_2(3)$ is ZORH's Theorem 1 (a corollary). The Gross-sector verdicts ($W \geq 0 \Rightarrow$ inside the Wigner simplex $\subset C_2$) decide the Wigner-nonnegative rows, relabelled controls. The ancilla lemma decides the product-with-stabilizer rows, relabelled controls. **Nothing decides the product-of-magic rows:** a tensor product of CNC points "is generally not CNC" (ZH), the judge checked the mechanism: for pencils with $I = \{0\}$ and $2 \leq \xi \leq d$ (the full set E, $\xi = d + 1$, is the one exception: $\delta_u \otimes \delta_v = \delta_{(u,v)}$), $\Omega_1 \times \Omega_2$ contains commuting pairs (a, b), (a′, b′) with $[a, a'] = -[b, b'] \neq 0$ whose sum leaves $\Omega_1 \times \Omega_2$, and Λ is not known to be closed under tensor products, so $C_1 \otimes C_1 \subseteq C_2$ is not a theorem in hand; the only prior is the qubit precedent, which is a statement about d = 2. **Nothing decides the entangled rows** (R4, R5): no theorem, no number, no precedent. The second question's antecedent (non-CNC vertices exist at (2,3)) is the exhibit. **(iii) Per conjunct of the order of record.** Doc 29 §6 item 5 asked for several frontiers scouted with live literature, judged on depth, falsifiability within a decade and independent-researcher fit, with the four-instance lesson and tests (a)–(g) travelling, met (seven lanes, 2025–26 literature, per-conjunct pre-checks in every report); "not a DQ5 re-mine of this corpus", met (no observer-line or witness-line candidate is ranked; §0 item 3). The owner's words, discovery about how the universe works, not the conference, are answered honestly in §8: the pass found the altitude of the discoverable, and it is below the words. **(iv) The scouts' own wording, pre-checked (the doc-29 extension).** (a) "cnc-type = one Fourier modulus", a proxy in the scout's text, a theorem in ZH's; promoted, and the judge's exact Z[ω] + closure test (J-C2) found the one single-modulus non-delta vertex's support to be the hyperplane $a^{\perp}$ (27 Paulis, closed, ⟨a⟩ central), the lifted odd-prime analogue of the n = 1 "other operators of this form". (b) "NON-CNC-NEEDED ~55%", one forecast for one undifferentiated list; re-priced by row type (§5.3) after the qubit precedent. (c) "K-L1: cnc enumeration may be intractable", de-risked: 40,536 supports; $\approx 1.8 \times 10^7$ (support, assignment) pairs before symmetry (the judge's estimate from the histogram: 3^{ξ} assignments per pencil), reduced by $Sp(4,3) \ltimes Z_3^4$ (order 4,199,040) to tens of orbit classes; membership by column generation with exact pricing over the 40,536 supports, or by the orbit-reduced hull. (d) "20 Haar states at registered seeds", not registrable (irrational Wigner functions); replaced by rational-Wigner random states. (e) The adversary's "altitude: foundations, not cosmos; big at 15%", adopted verbatim. **(v) What CAN stop it, and how the pilot tests it.** Not the readout (no face alphabet, no effect set); not structural triviality (hosting is possible, the n = 1 sector is everything, and the hull is proper, the 22 vertices); **the literature** (KΛ-2: the owed full-text residues, ZORH's appendices B+, ZH's Appendix references to Ref. [31]'s App. D "workaround", the Okay listing; a printed two-qutrit membership anywhere → cite, stop); **caps** (KΛ-1: the LP's column count; printed, never upgraded); **thinness** (KΛ-3: CNC-HOSTED-AT-2 on every row with the n = 3 rung out of budget → a positive typed note, smaller than a front).

5.3 The judge's own findings, stated so they cannot be oversold

1. **The exhibit survives an own route (J-C1 CONFIRMED).** 40 LP draws, 40 exactly certified vertices (each the unique rational solution of its exact tight system; all 360 plane sums ≥ 0 as Fractions; rank 81 by exact elimination; no `limit_denominator`, no primes): 17 deltas, 1 single-modulus non-delta, **22 multi-modulus (non-CNC) vertices**, 19 with full Pauli support, 2 simple (exactly 80 tight facets). Three invariant classes coincide with the scout's probe-D classes: (support, negatives, min, max, tight) = (1, 0, 0, 1, 320), (18, 6, −1/9, 2/9, 248), (57, 22, −1/9, 2/9, 240), the last with exactly two moduli, $|F|^2 \in \{1/3, 1\}$. Judge grade: one leg, float-located / exactly-certified; a numpy runtime warning at the locate stage (divide-by-zero in a matmul) is disclosed and is not verdict-bearing, every decided quantity is exact, and a wrong float tight set can only produce an inconsistent exact system (skipped), never a false certificate.
2. **The CNC supports at (2,3) are a census of 40,536 closed sets (J-B CONFIRMED, 0.1 s), with the structure ZH's Theorem 1 predicts:** sizes {0:1, 1:40, 2:540, 3:3240, 4:9490, 5:13824, 6:10080, 7:3120, 10:160, 13:40, 40:1} lines, subspaces (40 lines, 40 planes, 40 hyperplanes $a^{\perp}$ of 13 lines, E), pencils ⟨a⟩ + m planes (m = 2: 240 sets of 7 lines; m = 3: 160 of 10), and partial ovoids (pairwise non-commuting lines) of size ≤ 7. **$\xi_{max}(2,3) = 7 = dn + 1$:** the ZH lower bound on the maximal number of pairwise non-commuting Pauli observables is tight at two qutrits, a datum for their open problem 3, to be checked against the finite-geometry literature of partial ovoids of W(3,3) (L2) before it is called anything; the n = 3 value (a maximum independent set in the collinearity graph of W(5,3), 364 vertices) is the cheap co-runner row M-Λ8(iii), between the ZH bound 10 and the ovoid bound 28.
3. **The single-modulus non-delta vertex is a genuine CNC point beyond Theorem 3's family (J-C2 CONFIRMED):** support $a^{\perp}$, γ nonlinear, the kind of point that hosts states outside the Wigner simplex (its own entries reach −1/9). At n = 1 the analogous points are the 72 non-delta vertices (support 6); at n = 2 they are lifted by a central Pauli. Nothing here is a verdict on any registered state.
4. **The literature, read today, decides nothing of the first question:** no numerics at any (n, d) in 2110.12318 or 2407.10349; the only quantitative precedent is the qubit "two copies in, three out"; the authors' own open list does not contain the state-membership question, the house is not racing a stated agenda item, only a natural one.

Honest odds (judge). PILOT-Λ battery green with V_CNC enumerated and every control row as forecast within a week: ~75%. Product rows R1–R3 decided: ~85% (of which INSIDE ~60%, the qubit precedent). Entangled rows R4–R5 decided: ~70% (of which OUTSIDE ~50%). ESCAPE-AT-2 by some registered state: ~45%. CNC-HOSTED-AT-2 for every registered row: ~35%. NOT-DECIDED on at least one row at the caps: ~25%. The n = 3 threshold rung landed within the cycle: ~40%. A sentence quotable whole-with-riders within one cycle: ~50%. Something the owner would call "how the universe works" at Theorem-W altitude: ~5%, the adversary's number, which the judge shares.

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6. The first program under it, LAMBDA (doc-31 program; report = doc 32)

Binding order (the house rule since doc 26 §5, with the doc-28 and doc-29 extensions): pilot → verifier gate → spec freeze → hostile gate → engine → two adversarial legs → synthesizer → doc 32. No spec is written before PILOT-Λ and its pilot verifier return; every conjunct of this document's §5 and every scout's wording checked in §5.2 is transcribed verbatim into the pilot docstring's frozen rule; no definition introduced after a readout may carry a verdict (a row added after any row is read is flagged and carries none).

Mandates

- **M-Λ1, PILOT-Λ (the pre-check; runs FIRST; the entry calculation; one week-equivalent).** In order: **(a)** the literature residues of KΛ-2 read at full-text grade before any row (ZORH appendices; ZH whole incl. its Appendix references; Raussendorf et al. 2020's two-qubit statements, if a two-qubit cnc-membership table exists there it becomes the qubit control row; Okay's listing by any route), a printed two-qutrit membership stops the front. **(b) L0 battery:** reproduce the scouts' probe B ($\Lambda_1(3)$: 81 vertices, 9 + 72), probe D's classes, the judge's 40 vertices and 40,536 closed sets, from isolated sha-verified copies; pins before/after. **(c) L1 enumeration:** V_CNC(2,3) from the 40,536 supports × noncontextual assignments (characters on E: 81; linear on subspaces; free on the generators a_k and a basis of I for pencils), de-duplicated as operators; orbit representatives under $Sp(4,3) \ltimes Z_3^4$ (generated from symplectic transvections; canonical forms by invariants then exact orbit test); vertex flag per representative by exact rank at two run-band primes as regression pins (nothing decided by a prime); the census printed with caps. **(d) The control rows first** (P-Λ-ctrl), then **(e) the open rows** R1–R6 by exact rational LP (sympy `lpmax` / `lpmin` on `python3.12`, or an own rational simplex, with HiGHS to locate; column generation with exact pricing over the 40,536 supports; a Farkas vector verified exactly on every OUTSIDE), **(f)** the non-CNC vertex census (10^4 exact draws; canonical forms; multiplicities) and **(g)** the update closure per class (the 40 × 9 Pauli measurements; exact decomposition over found classes). Foreground; scratch-only writes; a MANIFEST.
- **M-Λ2, the pilot verifier gate (one adversarial rigor-type leg; its ruling is the gate).** Own planes, own enumeration of V_CNC from ZH Theorem 1 directly (not from the judge's census), own LP route (rational simplex vs verified HiGHS dual), own Farkas checks by hand on two OUTSIDE rows, own re-certification of ten vertices; KΛ-0 ruled; tokens from the rigor band.
- **M-Λ3, spec freeze (only on a PASS at M-Λ2).** The registered family and the typed outcomes verbatim from §5; the wording ladder built before any engine (ΛW-0 FAIL / ΛW-1 "non-CNC vertices exist at (2,3)" (the exhibit, certificate-grade) / ΛW-2 "the registered states {…} lie / do not lie in the CNC hull (exact certificates)" / ΛW-3 ESCAPE-AT-2: "a nonnegative hidden-variable model over Λ for two-qutrit magic-state computation must use points outside the constructible CNC class for the state {…}", whole-with-riders only / ΛW-4 THRESHOLD-3 / ΛW-SPLIT (product rows inside, entangled rows outside, a typed wall) / ΛW-INV (a state outside $\Lambda_2(3)$: impossible by Theorem 1, an arithmetic error)); caps and the stop deadline registered.
- **M-Λ4, the hostile gate G31-0 (before any engine beyond the pilot).** (a) The decided-at-freeze check PER ROW against ZORH Theorem 1, Gross's theorem, the ancilla lemma, ZH Theorem 1/Theorem 3 and the qubit precedent, with §5.2 as the template, any registered forecast found to be a corollary is relabelled before the run; (b) circularity: V_CNC is defined by ZH's letter only (no "and whatever else hosts the states"); (c) the (h′) check: the Farkas certificate and the orbit canonicalizer are shown well-defined on every registered row (exact data) before any forecast is scored; (d) the growth bans (KΛ-5/6) fused into every rung.
- **M-Λ5, the threshold rung (n = 3).** On CNC-HOSTED-AT-2 for R1–R3, or regardless as a data lane: $|S\rangle^{\otimes 3}$, $|N\rangle^{\otimes 3}$, $|S\rangle|S\rangle|N\rangle$ in C_3 ($\Lambda_3(3)$: 729 coordinates, 30,240 facets; supports by Theorem 1 with symmetry; column generation); typed THRESHOLD-3 per state; the prime-indexed comparison with the qubit precedent stated only with "as cited by Zurel–Heimendahl from Raussendorf et al. 2020".
- **M-Λ6, the house rows (data lane; never headline; n = 3).** The doc-20 N2 write-channel output on the registered A-B(3) stabilizer input and the doc-21 species-1 state, placed in the hierarchy Wigner simplex $\subset C_3 \subset \Lambda_3(3)$, the Λ-language re-pricing of NEGATIVITY-REQUIRED that touches no committed verdict (the carriers are nonnegative in Λ by construction; which class of points carries them is the row). Doc 20's riders travel whole.
- **M-Λ7, standing sweeps + triggers.** The Λ program (Raussendorf, Okay, Zurel, Ipek, Heimendahl; Bilkent theses); Zurel–Davis 2602.22336 citers; Schmid–Selby–Spekkens classical-explainability school; Wang–Wilde–Su max-mana line; the partial-ovoid finite-geometry literature (L2); the per-export re-sweeps of docs 19–21 carried; the Perimeter post-2026-10-30 leg belongs to G26-2/G30-2, not to this program (§0).
- **M-Λ8, co-runners (cheap, self-terminating, background, never headline; launched when the run band opens). (i) PRE-R**, REGGE-EXACT's pre-check under a one-week cap: (0) freeze the continuum treatment exactly (SOS positivity on $[M^2, \infty)$); (i) control: Berman–Geiser implied; (ii) the 2-state exact optimum vs $2m_2^2 - M^2$; (iii) the 3-state peak; opens runner-up 1 by the condition in §7. **(ii)** CAUSAL–MAGIC's law-shape at a second and third stabilizer product basis with the adversary's exact DP (P_{SO^*} vs $(1 + P_{causal^*})/2$), data row; trigger KQ-3. **(iii)** $\xi_{max}(3,3)$ exactly (the maximum pairwise non-commuting set of three-qutrit Paulis = a maximum independent set in the collinearity graph of W(5,3), 364 vertices) after the L2 literature check, a datum for ZH's open problem 3; F2's odd-prime partitioning threshold $m_2(3)$ rides here. **(iv)** the 2601.15842 Appendix-C parity defect (one line; verification duty).

Entry calculation = PILOT-Λ (pre-registered, finite, exact; registered predictions with declared parity)

- **P-Λ-ctrl (MANDATORY).** (a) Every stabilizer state and every registered Wigner-nonnegative mixture returns INSIDE C_2 (no certificate needed beyond the Wigner decomposition, regressed). (b) $|S\rangle\otimes|0\rangle$ and $|N\rangle\otimes|0\rangle$ INSIDE with an explicit CNC decomposition of the ancilla-lemma form (a corollary, registered so it is never a finding). (c) Every one of the 22 + 18 multi-modulus vertices OUTSIDE with a verified Farkas certificate (the machinery's teeth). (d) $\Lambda_1(3)$: all 81 vertices CNC and every registered single-qutrit state INSIDE $C_1 = \Lambda_1(3)$ (the n = 1 base of the ladder, a corollary). (e) The CNC-vs-Clifford control: $D_{jk}|+\rangle|+\rangle$ (f = jk, Clifford) is a stabilizer state, INSIDE. Failure of any clause = KΛ-0 at the pilot.
- **P-Λ1 (enumeration).** V_CNC(2,3) enumerated below the cap; the number of distinct CNC points lies between 10^4 and 2×10^7; their orbit classes under $Sp(4,3) \ltimes Z_3^4$ number < 100; the CNC points that are Λ-vertices include the 81 deltas and the $a^{\perp}$-type class and exclude every line- and plane-support point. **Forecast TRUE ~75%**; FALSE on the orbit count ⇒ caps re-registered (KΛ-1); FALSE on the vertex clause ⇒ an arithmetic error or a new class, reported first.
- **P-Λ2 (the product rows).** R1, R2, R3 INSIDE C_2. **Forecast TRUE ~60%** (the qubit precedent transports); FALSE on any ⇒ ESCAPE-BY-PRODUCT, the d = 3 copy threshold is 2 against the qubit 3, published as the finding (declared parity).
- **P-Λ3 (the entangled rows).** At least one of R4 (the four registered cubic-phase states) or R5 is OUTSIDE C_2 with a Farkas certificate. **Forecast ~50/50, parity declared**: TRUE ⇒ ESCAPE-BY-ENTANGLED, the first odd-prime state outside the constructible model, with its orbit; FALSE ⇒ the constructible model hosts the registered entangled magic at two qutrits (a positive typed result).
- **P-Λ4 (the random rows).** Among the 20 rational-Wigner random states, the INSIDE fraction is strictly between 0 and 1. **Forecast ~55%**; all INSIDE ⇒ evidence toward CNC-HOSTED-AT-2 (typed, never "all states"); all OUTSIDE ⇒ the hull is thin around the stabilizer polytope (typed).
- **P-Λ5 (the vertex census).** The non-CNC vertices of $\Lambda_2(3)$ fall into ≥ 5 Clifford orbits at 10^4 draws, with at least one orbit of simple vertices (80 tight facets). **Forecast ~80%**; FALSE ⇒ fewer classes than the invariants suggested, data.
- **P-Λ6 (update closure).** At least one non-CNC class LEAKS under some Pauli measurement (its post-measurement operator is not a convex combination of found classes at the cap). **Forecast ~60%**, parity declared; CLOSED for every class ⇒ the first odd-prime update table is complete at (2,3), a positive result the Ipek–Okay line asked for.
- **P-Λ7 (near-corollaries, registered so they are never findings).** $\xi_{max}(2,3) = 7 = dn + 1$ (the judge's census); $C_2 \subsetneq \Lambda_2(3)$ and Wigner simplex $\subsetneq C_2$ (the exhibits); every CNC point lies in $\Lambda_2(3)$ (ZH footnote 3; regressed on the enumeration). **~99%.**

Declared parity. TRUE and FALSE are reportable on every row; a refuted forecast is reported first; CNC-HOSTED-AT-2 is a result, never a failure, and never feeds a "classical" sentence.

Engines and build plan

Seed: `scout_dq5_instruments_probe/probe_D_lambda2.py` (sha256 `04bedc96…`; HiGHS locate + exact verify; the Fourier-modulus test) and `dq5_judge_probe/probe_JC_lambda2_ownroute.py` (sha256 `98e3cc4e…`; own planes; exact tight-system solve; exact Z[ω] moduli; the closure test) + `probe_JB_closed_sets.py` (sha256 `e545feec…`; the closed-set DFS). House machinery as isolated sha-verified copies: `analysis/epistricted_lattice.py` (`weyl_support`, `isotropic`, `derive_generators`, `bfs_group`, the cyclotomic arithmetic) and `analysis/witness_magic_lattice.py` (`kernel_diag`/`kernel_monomial` at p = 3; the Makhlin/census patterns for canonical forms). New (a week): the CNC enumerator from ZH Theorem 1 (supports × assignments → operators, de-duplicated); the $Sp(4,3) \ltimes Z_3^4$ canonicalizer (transvection generators; invariants first, support, value multiset, $|F|^2$ multiset, tight count, then exact orbit test); the exact membership LP with column generation and Farkas verification (sympy 1.14 `lpmax`/`lpmin` under `python3.12`, or an own rational simplex; HiGHS to locate); the n = 3 extension ($\Lambda_3(3)$: 729 × 30,240; supports with symmetry). Environment: `python3.12` with numpy 2.0.0, scipy 1.16.2 (HiGHS), sympy 1.14.0 (verified today); runs with `-I`. Corpora: `papers/19_epistricted_middle/` (2110.12318 and the guards already there), `papers/20_witness_magic/`; a new `papers/26_lambda/` opened by L1–L2 (2407.10349, 2104.05822, 2312.10734, 1905.05374, 2004.01992, 2602.22336, 2305.17287, the partial-ovoid sources).

Fresh prime-band plan (every base and first prime certified this pass by own trial division AND sympy `isprime`, J-A; `dq5_judge_probe/primes_ja.log`)

Everything consumed through doc 30 lies at or below 9,200,029 (doc 30's steelman tokens); the record reserves **≥ 9,300,001 (doc 30's G30-1; prime), ≥ 8,900,029 (doc 28; prime), ≥ 8,550,001 (doc 27; prime)** and every earlier reserve (≥ 6,600,001; ≥ 7,300,001; ≥ 7,700,071; ≥ 8,100,073; ≥ 8,500,007, all re-certified prime today) stay their owners' and UNTOUCHED. LAMBDA bands, from the successor band doc 29 reserved fallow (9,400,001 = 13 × 317 × 2281, composite, first prime 9,400,009): **run ≥ 9,400,009 (prime; PILOT-Λ tokens 9,400,009 / 9,400,019; engine 9,400,021 / 9,400,043; co-runners 9,400,049 / 9,400,063); rigor / pilot-verifier ≥ 9,500,021 (9,500,001 = 3 × 7 × 73 × 6197 composite; first prime 9,500,021; 9,500,041 / 9,500,047 / 9,500,089 certified); physics / steelman ≥ 9,600,037 (9,600,001 = 79 × 137 × 887 composite; first prime 9,600,037; 9,600,047 / 9,600,091 / 9,600,103 certified); closing-audit reserve ≥ 9,700,003 (9,700,001 = 47 × 206383 composite; first prime 9,700,003; 9,700,027 / 9,700,039 / 9,700,063 certified), UNTOUCHED until an audit is wanted; successor band ≥ 9,800,003 (9,800,001 = 3^3 × 23 × 43 × 367 composite; first prime 9,800,003; 9,800,009 / 9,800,027 certified) reserved fallow for the next program.** Nothing is decided by a prime anywhere in this program: every token is a regression pin (mod-p rank checks of exact certificates); the certificates themselves are rational.

Kill criteria of record (pre-frozen here; to be frozen verbatim in the pilot docstring)

- **KΛ-0 (pilot gate, method).** Any P-Λ-ctrl clause fails ⇒ the machinery is broken; stop before any open row; repair dated; re-run.
- **KΛ-1 (caps).** V_CNC enumeration or the membership LP exceeds the registered caps ⇒ NOT-DECIDED-BELOW-CAPS for the affected rows, caps printed; never upgraded; the vertex census and the update closure still run.
- **KΛ-2 (literature-decided).** A printed two-qutrit (or general odd-d) membership statement for any registered row, or a printed odd-prime two-qudit vertex census, found at M-Λ1(a) or by a leg ⇒ cite, stop that rung; the exhibit then travels as corroboration only.
- **KΛ-3 (thinness).** CNC-HOSTED-AT-2 on every registered row AND the n = 3 rung outside budget ⇒ a positive typed note ("the constructible model hosts every registered two-qutrit state"), no front; the owner decides whether to fund the threshold rung.
- **KΛ-4 (budget).** One week engine + the pilot verifier + two legs; no extension without a dated owner ruling.
- **KΛ-5 (wording bans).** Any drift toward "efficient", "not simulable", "no nonnegative model", "quantum advantage begins at …", "the classical world ends at two qutrits", "requires QM", or a CNC-HOSTED outcome worded as "classical" ⇒ stop the sentence at the licensed rung.
- **KΛ-6 (growth bans).** No drift toward "why quantum", toward a universal threshold law at every prime from one prime, or toward an efficiency-of-simulation sentence from a membership fact; the ξ_max rows are data about a finite-geometry quantity, never a complexity sentence.
- **KΛ-7 (exhibit withdrawal).** A leg fails to re-certify any of the 40 judge vertices or 18 scout vertices by its own route ⇒ the exhibit is withdrawn from the record and reported first.

Scout lanes (commission before spec freeze; L1–L4)

L1, full-text grade: 2110.12318 (appendices B+), 2407.10349 (whole, incl. every reference to Ref. [31]'s Appendix D workaround and to Ref. [36]'s correction), Okay–Zurel–Raussendorf 2104.05822 (the two-qubit extremal points), Raussendorf–Bermejo-Vega–Tyhurst–Okay–Zurel 1905.05374 and Zurel–Okay–Raussendorf 2004.01992 (the qubit cnc polytope and its two/three-copy statement, the qubit twin of the first question), Ipek–Okay 2312.10734, Zurel–Davis 2602.22336, Zurel–Okay–Raussendorf 2305.17287, the Bilkent theses; Okay's author listing by INSPIRE (`a Okay, C and de >= 2024-01-01`), the one net gap of this pass. **L2**, finite geometry: partial ovoids / maximal sets of pairwise non-collinear points of the symplectic polar spaces W(3,q), W(5,q) (Thas; De Beule–Klein–Metsch–Storme; the ovoid bound q^n + 1; the non-existence of ovoids for n ≥ 3), the ξ_max rows' literature; whether "7 at W(3,3)" is classical (expected: yes, then it is a cite, not a datum). **L3**, exact LP / Farkas certification practice (rational simplex; exact verification of a HiGHS dual; the doc-29 variant-6 pattern) and the magic-resource conventions for mana / sum-negativity / negative mass (the adversary's R-6: quote the convention with the number). **L4**, occupancy: any "Λ polytope", "cnc", "hidden variable model for magic states", "qutrit magic state simulation" posting since 2024-07 on arXiv/INSPIRE with 11 s spacing after a 429; the Schmid–Selby–Spekkens classical-explainability school; Wang–Wilde–Su citers for the max-mana two-qutrit states (R5's registration).

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7. Runners-up and when-instead conditions

1. **REGGE-EXACT (shortlist 2; runner-up 1).** Its pre-check runs regardless as the co-runner PRE-R (M-Λ8(i), one-week cap). **Run instead, it jumps the queue and LAMBDA continues as a data lane, if** PRE-R returns EXACT at the three smallest truncations (n = 2, 3, 4) AND the exactness is not forced by a finite-state identity (test (d)) AND the continuum treatment was frozen exactly before any optimum was read. If PRE-R returns approximate (the ~65% branch) it is typed purgatory and recorded; if the SOS build exceeds the cap it is NOT-INSTANTIABLE-IN-A-WEEK, recorded, and the candidate waits for a cheaper first cell. Never a gravity sentence; never a sentence about the k_max → ∞ limit.
2. **COSMIC-RG (shortlist 3; runner-up 2).** Run instead if LAMBDA stops at KΛ-2 (literature-decided) or KΛ-0 (method) AND PRE-R has not fired, or if the owner prefers a discrete-cosmology front; pre-check first (an afternoon): the Tauberian/binomial-transform literature for a theorem deciding the MORS density conjunct, then the Borel–Cantelli lemma on the number of maximal elements for t_n^{1/n} → 0; if both close, it is a note and the next runner-up is taken.
3. **HIDDEN FREENESS (shortlist 4; runner-up 3).** Run instead if the owner wants a many-body front, or after LAMBDA lands as the following cycle's census front; registration of sector-wise freeness (the TFIM-ring hazard) before any run; the 6–12 month scoop clock (Ruh–Elman–Chapman's named

next problem) argues for the pilot soon if at all.

4. **CS-PHASE as an engine (never a front).** Build only if the owner wants the exact causal-set instrument for its own sake (n ≤ 10 tables of Z_n^{(2)}, Z_n^{(4)}, certified zeros, per-class ratios, the smeared family at three ε); its deliverable is a data note with the crossover typed NOT-DECIDED-BELOW-CAPS unless a finite-n theorem shape appears; bans: never "the path integral selects spacetime", never a continuum sentence, the KR regime quoted as unreachable with the probe's numbers.
5. **The duties**, 6d certification (Q3), HOLO-WITNESS-SIM (N2), CMB-WITNESS (K5), the inverse Bethe check (T5), only if a cycle is otherwise empty or a trigger makes a row matter (a tensor detection; a 21-cm claim; a Paper C/F posting-policy revisit; a 6d abelian principle).
6. **The watch items**, the Standard Model on a finite lattice (an exact 3+1d construction with finite anomaly arithmetic → a mod-p audit duty); an explicit small Tsirelson separation (a posted example or a C_qa upper-bound technique); Brown–Panzer–Yeats "periods from Martin sequences" (re-opens Q2 as a D-finite theorem target); the Hamma line's orientation analysis (I1's rider); the Kunjwal line's quantitative SO/causal relation (M-Λ8(ii)'s trigger); Chataignier–Smith 2610.28732 (a mandatory cite-and-distinguish row for any observer-line export, never a candidate).
7. **The post-meeting block**, G26-2 / G30-2 and the one owner's block per document (doc 27's G26-3 re-ruling and G26-4 decision; SCOPE-CERT's riders R-SC1..6; doc 27's S-AM-5 parenthetical; doc 30's candidates (A)–(L)), unchanged in order and ownership, and not DQ5's; by the owner's words it gates nothing here.
8. **The observer line, the witness line, the I-p3 class-extension line and the arithmetic lane**, closed as ruled (docs 22 §6.2, 26 §3, 29 §3); nothing in this pass re-opens them; the house-rows lane M-Λ6 uses their committed objects as data, never as questions.

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8. Honesty section, what the survey found, and what would make this the wrong choice

Is this formulation-level? No, and the three-kill and four-instance tests are applied to it explicitly in §5.2: every definition is a published classification or a computed convex set on exact objects; the first computation's rows split into corollaries (the control rows, relabelled before the run), genuine computations (the product and entangled rows, the vertex census, the update closure), and derivation targets (a general CNC-hosting theorem for product states if P-Λ2 holds; the threshold law at n = 3). The residue of formulation is nominal: "constructible" means ZH's CNC class by its letter.

What would make this the wrong choice.

- **The owner wants frontier discovery about how the universe works, and this is foundations-grade.** Said in §5's first line and here again: LAMBDA-3 decides where the constructible classical description of quantum computation ends at the first odd-prime two-particle instance. It is a fact about the quantum/classical boundary of computation, with certificates. It is not a sentence about gravity, spacetime, the cosmos or the measurement problem. **The survey's honest finding is that no such sentence is reachable on exact-finite instruments today:** across six frontiers and 42 raw candidates, every universe-altitude shape is decided by its own definitions (Wigner's friend, Boltzmann brains in finite de Sitter, the measure problem, the cyclic universe's fluctuations, the baby-universe sector), by a certificate in hand (islands, holography-of-information, objectivity on the house's lattices), by the native-exactness of its own community (Veneziano positivity, c_2 completion, 6d non-abelian finiteness, the Elegant distribution), or is asymptotic-in-disguise (MBL, KPZ, ETH, the causal-set dynamics problem, the Python's lunch exponent); the two DECISIVE-shaped questions that survive the bar (the Standard Model on a finite lattice; an explicit Tsirelson separation) have no instrument. The adversary's number for "something at Theorem-W altitude within a cycle" is ~5%, and the judge's is the same. If the owner's bar is that altitude, the honest recommendation is not a different front but a different route: an instrument that does not exist yet (§7 item 6 names the two triggers), or the acceptance that the house's edge, exact certificates on finite objects with adversarial verification, reaches the foundations of computation and the arithmetic of law, and reached the cosmos only once, on the witness line, because a live dispute happened to be decidable by calculation.
- **It may be literature-decided.** The authors of the construction could post the two-qutrit table any week; the owed full-text residues (KΛ-2) could already contain it. The defense is M-Λ1(a) before any row and the explicit exhibit-as-corroboration fallback.
- **It may be thin.** CNC-HOSTED-AT-2 on every registered row is a positive note, not a front, unless the n = 3 rung lands; the judge priced the rung at ~40% within the cycle. The parity declaration makes the house publish the note as the finding if that is what comes.
- **The exhibit was cheap, and cheapness is a warning.** Five seconds for the scout, thirty for the judge; whatever is this cheap, the program's owners can do in an afternoon. The house's delta is the registered-state question, the census, the certificates and the two legs, not the sampling.
- **A proxy became a definition by a theorem the scout had not cited.** It happened to be right (ZH's conclusion); the lesson (below) is that it must be checked before it travels, not after.
- **The ancilla lemma and the qubit precedent cut the forecast.** The instruments scout's "NON-CNC-NEEDED ~55%" was priced on an undifferentiated list; half of that list is decided INSIDE by a corollary, and the qubit precedent leans the product rows INSIDE. The live content is the entangled rows and the threshold, smaller than the scout's framing, and typed so here.

Is it truly discovery about how the universe works? At its own altitude, yes: whether the universe's computations admit a *constructible* classical bookkeeping beyond one particle is a real question about the structure of quantum theory, the field's own authors built the object to ask it, and no one has computed the answer; the house can, exactly, this week, with every answer a certificate. At the owner's altitude, gravity, spacetime, the cosmos, no. The judge does not dress the first as the second.

What DECISIVE export it could compose into later (never claimed now). (i) **D-Λ**, the odd-prime anatomy of classical explainability of computation: Gross simplex ⊂ CNC hull ⊂ Λ at n = 2 and n = 3, with certified states on every boundary, the house's located carriers (docs 19/20/21) placed in the hierarchy, and the copy-number threshold at d = 3 against the qubit 3, "the escape from constructible classical description is prime-indexed (or is not)", a FIELD synthesis in the walls-not-bridges shape, Paper S's natural fourth computation, quotable only with its "constructible (CNC)", "registered states", "d = 3" clauses. (ii) **The end of efficient classical simulation on the CNC model**: ZH's open problem 3 (is ξ_max polynomial in n?) is a finite-geometry question about partial ovoids of W(2n–1, d), the ovoid bound d^n + 1 is exponential, ovoids do not exist for n ≥ 3, and the true growth of maximal partial ovoids is the question; if the literature (L2) or an exact census at small n decides it, the CNC simulation's efficiency over its full phase space is settled either way, DECISIVE-shaped within the theory of classical simulation, a cite-or-datum the house can supply, never a sentence about nature. (iii) A cite-and-distinguish reading toward the Schmid–Selby–Spekkens classical-explainability program (which polytope a noncontextual explanation of two-qutrit magic needs), a rider for the 19+20 unit at its own gate, never a claim.

Lessons for the owner's list (drafted, not entered). (m) A scout's proxy definition must be checked against the field's own theorem before it travels, here the proxy ("one modulus = cnc-type") was a theorem (ZH's conclusion + Theorem 3) that also located the question's literature anchor; a proxy that had been wrong would have decided the front at the definition. **(n)** A product with a stabilizer ancilla is never an open row of a hull question whose points are closed under adjoining a stabilizer register (the ancilla lemma), register such rows as controls. **(o)** The adversary's (i), (j), (l) and the instruments scout's (h′) are adopted; the judge adds nothing to them.

Every claim in this document inherits the corpus's standing wording bans: "undecidable" (N1), "gravity is a magic factory", "QM derived", "requires QM", the bare "cannot write history and keep perfect time", "no nonnegative model exists", "not simulable", "loophole-free" bare; a null anywhere never feeds "gravity is classical"; a positive never feeds "gravity is quantum"; a CNC-HOSTED outcome never feeds "classical"; "efficient" never appears in a sentence of this program; licensing is never posting; defer-until-big governs all external timing.

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9. Provenance of the judging

Read order: README.md (index + open fronts + state of the field) → `00_DREAM_QUESTION.md` → doc 22 §6 (whole) → doc 26 (whole) → doc 29 (whole) → the eight DQ5 scout reports (whole; foundations, spacetime, cosmology, qft-arithmetic, information, statistical, instruments, adversary) → `scout_dq5_instruments_probe/` (registration, `probe_D_lambda2.py`, `probe_D.log`, `probe_B.log`, MANIFEST) and the `scout_dq5_adversary_probe/` listing → doc 20 §1 (the A-B(3)/A-F(3) cells: three qutrits, hence the house rows at n = 3) → `~/.claude/procedures/INDEX.md` and the `gated-frontier-research-front` entry with its DQ4/DQ5 scout variants (no judging-class entry exists). Literature read for the pre-checks: 2110.12318 (ar5iv, §1–§7 + App. A start), 2407.10349 (ar5iv, whole in two reads), the abstracts of 2602.22336, 2312.10734, 2407.10349, 2305.17287, the arXiv author listings of Zurel, Raussendorf, Heimendahl (the Okay listing: HTTP 429 / 404 three times, NOT RUN); the arXiv API scoop net returned 429 (the recorded limit) and was replaced by the listings. ***Judge-side computation*** *(records in `dq5_judge_probe/`, `MANIFEST.sha256`): J-A, bands certified by own trial division and sympy (`primes_ja.py` / `.log`; 09:37 CET; a certification); registration of J-B/J-C1/J-C2/J-C3 (`registration.txt`, sha256 `672c3a1240e532df…`, stamped 09:43:59 CET) before the scripts existed (`scripts_prerun.sha256` / `.stamp` 09:46:05: `probe_JC_lambda2_ownroute.py` `98e3cc4e…`, `probe_JB_closed_sets.py` `e545feec…`); runs 09:46–09:49 (`probe_JC.log` `6fe27302…`, `probe_JB.log` `81be33eb…`, `probe_JC_vertices.json` `98cc0fc8…`); results, J-B CONFIRMED (40,536 closed sets, 0.1 s), J-C1 CONFIRMED (22 multi-modulus vertices of 40 certified), J-C2 CONFIRMED (the single-modulus non-delta vertex's support is the closed hyperplane a^⊥), J-C3 data (three cross-route class matches; 2 simple vertices). No forecast of the judge's was refuted; the refutations in this document are against the scouts' registrations (the instruments scout's proxy, forecast and Haar rows; the qft scout's LP instrument) and are reported where they bear. Canon pins: 48 files hashed at 09:37:42 (`pins_before.txt`) and 09:53:06 CET (`pins_after_probes.txt`), byte-identical; a final pin list after this document was written is `pins_final.txt`. Environment: `python3.12` with numpy 2.0.0, scipy 1.16.2 (HiGHS, locate only), sympy 1.14.0; probes run with `-I`; the judge's warning at the locate stage disclosed in §5.3. No prime drawn; no committed engine imported or executed; no committed file modified (NN_.*md, engines, rows, results, logs, states, papers, README, memory, SUBMISSION_STATUS, the scout reports and probe directories untouched, the owner folds README and memory); no background process launched or orphaned (pgrep clean at every stage); this file and `dq5_judge_probe/` are the only artifacts, this file written in seven checkpointed chunks. The ranking is refutation-led against the scouts' own registrations and against the order of record's wording, with the adversary's five computed kills re-read and adopted and the recommendation's literature anchor read in full before it was ranked.*

Status: recommendation issued, LAMBDA-3 (program LAMBDA, report = doc 32), FIELD-lite at foundations grade with the honest altitude stated, PRE-R as its co-runner with a jump-the-queue condition for REGGE-EXACT. AWAITING GO for PILOT-Λ.